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# Notes on Mayfly Nymphs from Northeastern Minnesota Which Key to 'Stenonema vicarium' (Ephemeroptera: Heptageniidae)

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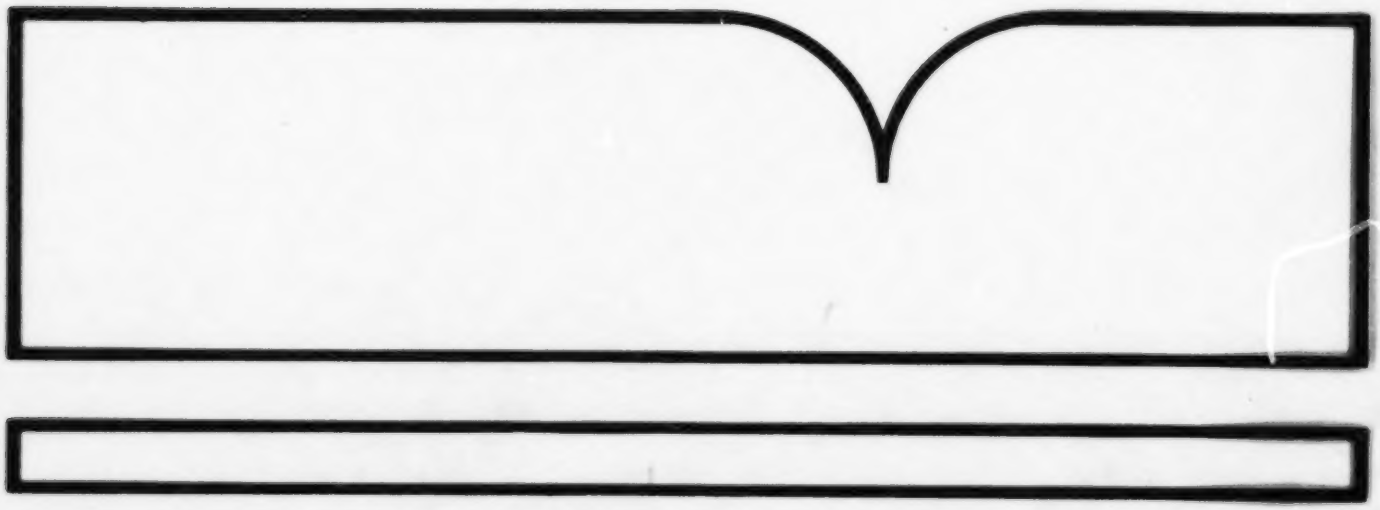

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16. ABSTRACT

Stenonema mayfly nymphs which key to Stenonema vicarium from Northeastern Minnesota should be considered to be Stenonema fuscum rivulicolum based on specimens that have been reared to adults.

17. KEY WORDS AND DOCUMENT ANALYSIS

| a. DESCRIPTORS | b. IDENTIFIERS/OPEN ENDED TERMS | c. COSATI Field/Group |
|---|---|---|
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## ENTOMOLOGICAL NOTES

### NOTES ON MAYFLY NYMPHS FROM NORTHEASTERN MINNESOTA WHICH KEY TO *STENONEMA VICARIUM* (EPHEMEROPTERA: HEPTAGENIIDAE)

A review of the literature indicates that *Stenonema vicarium* (Walker) adults have not been collected from northeastern Minnesota. However, mayfly nymphs which key to that species, based on the descriptions in Lewis (1974), have been collected from many streams in the area which are also inhabited by nymphs of the closely related species, *Stenonema fuscum* (Clemens). The identity of *vicarium* nymphs from northeastern Minnesota has been questioned because males reared from similar *vicarium* nymphs in Wisconsin were determined to be *Stenonema fuscum rivulicolum* (McDunnough) (Flowers and Hilsenhoff, 1975). Previous records for *vicarium* are from New York, Ohio, Pennsylvania, Vermont, and West Virginia. The junior author has also seen typical *vicarium* adults from Michigan, Maine, and Ontario.

Since a *vicarium* male was reared from a stream near Kenora, Ontario, Canada, 240 km to the northwest (Lewis, 1974), it was thought these Minnesota nymphs, which appear to be *vicarium*, were *vicarium* rather than *fuscum rivulicolum*. However, nine of the typical *vicarium* male nymphs from Snake Creek, T.16N, R.10W, S.12, Lake County, Minnesota were reared and found to be *fuscum rivulicolum*.

Diagnostic characters used to separate *fuscum* and *vicarium* nymphs are the amount of dark pigment on the ninth sternum and the number of setae on the maxilla (Lewis, 1974). These characters are sufficient to separate nymphs of these species in the eastern United States where both occur, but if *vicarium* occurs in Minnesota additional characters must be found to identify these species. Nymphs which key to *vicarium* should be reared to determine their identity.

#### LITERATURE CITED

Flowers, R. W., and W. L. Hilsenhoff. 1975. Heptageniidae (Ephemeroptera) of Wisconsin. Great Lakes Entomol. 8:201-218.

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